

**Salem Sound Coastwatch (SSCW)**  
**DRAFT Scope of Work, July 1, 2019 – June 30, 2020**  
**as Lower North Shore Regional Service Provider for the MassBays National Estuary Program**

The Massachusetts Bays National Estuary Program's (MassBays') Workplan for Federal Fiscal Year 2019 is the first implementation workplan for MassBays' Comprehensive Conservation and Management Plan (CCMP). Actions for the coming year are driven by the following Goals and Strategies described in our Revised CCMP:

**Goal 1. MassBays provides new resources to support research and management in the Bays.**

- Strategy 1.1 Address data gaps
- Strategy 1.2 Support valid (QA/QC) data collection and use

**Goal 2. MassBays reaches all planning-area municipalities with actionable information about coastal habitats**

- Strategy 2.1 Support research to inform policy and actions
- Strategy 2.2 Technical support and communications
- Strategy 2.3 Increase influence of underserved communities on decisionmaking

**Goal 3. MassBays provides regular and locally informed State of the Bays reporting that reflects the unique characteristics of MassBays assessment units (embayments, rocky shore, barrier beach), and documents progress toward target conditions.**

- Strategy 3.1 Establish target conditions
- Strategy 3.2 Guide local action for expanded habitat and improved water quality

Through implementation of these strategies, MassBays anticipate achieving the following Outcomes:

- Sustainable NEP
- Improved habitat continuity and restored hydrology
- Improved water quality
- Resilient coastal habitat, including nature-based coastal protection
- Restored natural communities
- Robust interagency and interdisciplinary collaboration and partnerships
- Well-informed, multisector input to decisionmaking which includes underserved communities

SSCW will implement the programs and projects below, developed and approved by the Lower North Shore Local Governance Committee (LGC), to make progress toward these overarching outcomes. A Lower North Shore Regional Coordinator (RC) will lead SSCW's efforts.

In addition to the region-specific Actions below, the RC and SSCW will assist MassBays' overarching efforts to implement the CCMP by:

- Attending quarterly MassBays Management Committee meetings, providing updates on progress under each Strategy prior to each meeting.
- Participating in periodic Regional Coordinators' meetings and conference calls
- Participating on at least one Management Committee Subcommittee
- Responding to requests for information from Central Staff in a timely manner.

Reporting requirements are listed under the final section below titled ***Invoices, Reporting, and Deliverables.***

### Strategy 1.1 Address data gaps

<b>Activity 1</b>	<b>Monitor Nutrients in Salem Sound</b>	
<b>Description/Objective</b>	Design and implement nutrient monitoring to generate quality data sets for Salem Sound	
<b>Partners</b>	SeaTrac System, Inc., ACASAK Technologies, SSU	
<b>Budget &amp; RC LOE</b>	100h	
<b>SSCW Tasks</b>	<b>Deliverables</b>	<b>Timing (Q1 - 4)</b>
Consult with organizations working in Salem Sound	Working with SeaTrac, Marblehead-based entrepreneur of an autonomous solar powered vessel, CZM, Salem State, MassBays	Q1
Work with MassBays Staff Scientist to develop and execute monitoring plan	Collect nutrient data in the Danvers River estuary, at wastewater treatment discharge sites (SESD and Manchester) and near the outward boundary of the Sound. Other parameters to be assessed include salinity, temperature, pH plus a grab sample for isotopic analysis	Q1-Q3
Seek additional funding for water quality monitoring	list of funding sources considered and pursued, letter(s) of support provided	Q4

<b>Activity 2</b>	<b>Bacteria monitoring</b>	
<b>Description/Objective</b>	Continue citizen monitoring in coastal waters to identify hot spots and potential for remediation and source control.	
<b>Partners</b>	<b>Manchester Coastal Stream Team, Volunteers, DMF, EPA</b>	
<b>Budget &amp; RC LOE</b>	\$3,000, 100h	
<b>SSCW Tasks</b>	<b>Deliverable</b>	<b>Timing (Q1 - 4)</b>
Identify bacterial pollution with biweekly summer water testing for <i>Enterococcus</i> at outfalls and streams under SSCW's Clean Beaches & Streams	Bacterial levels for 14 - 18 outfalls or streams, results published on SSCW website	Q1
Update QAPP	QAPP – Bacterial Monitoring and Stormwater Toolbox (EPA)	Q2
Conduct qPCR study at bacterial hotspots	DNA source report	Q4
Conduct monthly water sampling for a DMF fecal coliform sanitary survey at 3 beaches, Manchester and Magnolia	Submit report to DMF	Q4

<b>Activity 3</b>	<b>Assessing Coastal Acidification in Massachusetts</b>	
<b>Description/Objective</b>	SSCW will establish a citizen monitoring program to document pH and temperature in mud flat pore water.	
<b>Partners</b>	MIT Sea Grant, volunteers	
<b>Budget &amp; RC LOE</b>	\$2000, 100h	
<b>SSCW Tasks</b>	<b>Deliverables</b>	<b>Timing (Q1 - 4)</b>
Educate students, teachers and the public about ocean acidification (LNS, SS)	community lecture	Q4
Conduct monitoring at least three mudflats	summary of results, recommendations for following year with trained citizen scientists	Q3
Share data with EPA OCA network, NECAN and other relevant groups	Participate in regular calls and webinars and provide updates. Participate in Shell Day on August 22 & 23, 2019.	Q3, Q4

<b>Activity 4</b>	<b>Quantifying Phytoplankton and Turbidity in Salem Harbor</b>	
<b>Description/Objective</b>	Collaborate under a Healthy Estuaries grant to Salem State University to conduct water quality monitoring to determine phytoplankton community structure and provide a better understanding of forcings causing high biomass that has been documented to be responsible for increased turbidity in Salem Harbor. Data generated from this project and the conclusions reached will allow us to target specific remediation strategies for the improvement of Salem Sound's water.	
<b>Partners</b>	SSU	
<b>Budget &amp; RC LOE</b>	\$1000, 200h	
<b>SSCW Tasks</b>	<b>Deliverable</b>	<b>Timeline (Q1-4)</b>
Continued monitoring during summer	Results	Q1
Sample collection and analysis	quarterly interim reports	Q2-Q4
Plan and host a mid-grant expert solicitation in which we will invite appropriate local, state, and federal players to share knowledge and strategies	list of attendees and summary of outcomes	Q1
Develop remediation strategies	alternatives list and analysis	Q4
Plan and host a community lecture	agenda, sign-in sheet including subscribers to MassBays' e-newsletter	Q3

<b>Activity 5</b>	<b>Lower North Shore Salt Marsh Monitoring for Climate Change</b>	
<b>Description/Objective</b>	With \$12,261 in funding from Massachusetts Environmental Trust, Conduct citizen science monitoring to record long-term climate change impacts on salt marshes from sea level rise, storm surge and other impacts. Provide local, state and federal wetland managers with data on salt marsh conditions to inform protection, restoration and management efforts. Monitoring by volunteers also supports citizen stewardship. RC will collect data to add to its existing long-term data on 6 salt marshes from Marblehead to Gloucester, with the support of citizen monitoring, providing partners and volunteers with training, data management, QA/QC, reporting, and public outreach.	
<b>Partners</b>	<b>MA CZM, MA DER, Volunteers</b>	
<b>Budget &amp; RC LOE</b>	\$18,000, 400h	
<b>SSCW Tasks</b>	<b>Deliverable</b>	<b>Timing (Q1 - 4)</b>
QAPP update	Update QAPP for changing climate incorporate the Massachusetts Office of Coastal Zone Management's Sentinel Site protocols for new baseline data collection	Q1-2
Monitor 6 salt marshes for vegetation and salinity	Recruit and train volunteers Outreach and training: Summer 2019 training sessions for volunteers, outreach materials Collect and comparative analysis of results	Q1-2
Analysis and Report	Prepare analysis with long-term datasets Long-term marsh data analysis	Q4
Outreach	Conduct outreach on MET funded marsh monitoring results	Q4
Survey width and bank depth of Saratoga Creek, Good Harbor Gloucester	Summary of 5 years' monitoring	Q2
Continue marsh edge erosion assessment at 2 sites in Salem.	Summary of all findings, lessons learned provided to CZM	Q4

<b>Activity 6</b>	<b>Marine Invasive Species Monitoring</b>	
<b>Description/Objective</b>	Monitoring established field sites for non-native species through the MA MIMIC program	
<b>Partners</b>	CZM, volunteers	
<b>Budget &amp; RC LOE</b>	\$1000, 200h	

<b>SSCW Tasks</b>	<b>Deliverable</b>	<b>Timing (Q1 - 4)</b>
Conduct public outreach to increase understanding of the transport, population dynamics, and impacts of invasive species	list of publications and presentations	Q4
Organize and train volunteers	number of volunteers	Q1
Conduct monthly MIMIC monitoring July- October 2019, May-June 2020	Data submitted to CZM	Q2
Conduct long-term monitoring of settle plates at the Beverly Pier to understand fouling organisms	photodocumentation	Q2

### **Strategy 1.2 Support valid (QA/QC) data collection and use**

<b>Activity 10</b>	<b>Reviewing and testing AquaQAPP and WQX templates</b>	
<b>Description/Objective</b>	Participate in beta-testing for online QAPP generator and data upload tool	
<b>CCMP Outcome</b>	Improved water quality	
<b>Partners</b>	MassRivers Alliance: workshop hosting	
<b>Budget &amp; RC LOE</b>	\$1000, 50h	
<b>NSRWA Tasks</b>	<b>Deliverable</b>	<b>Timing (Q1 – 4)</b>
Onsite assistance for beta testing and train-the trainer workshops	Comments on AquaQAPP and WQX data upload tool	Q2-Q3

### **Strategy 2.2 Provide technical support and communications**

<b>Activity 9</b>	<b>Greenscapes Program</b>	
<b>Description/Objective</b>	Create and disseminate outreach information, activities, and materials on stormwater management to <i>Greenscapes</i> member communities	
<b>CCMP Outcome</b>	Improved water quality	
<b>Partners</b>	Ipswich River Watershed Association, 8 Towns and the Great Marsh, 25+ municipalities in Essex County	

<b>Budget &amp; RC LOE</b>	\$50,000, 500h	
<b>SSCW Tasks</b>	<b>Deliverables</b>	<b>Timing (Q1 - 4)</b>
Provide useful information (via webinars, lectures, personal assistance) on the MS4 requirements	Conduct MS4 Outreach and Education	Q2
Recruit communities for participation in program	list of participating communities	Q1
Creation of outreach materials; website, workshops, handouts, presentations	copies, links to outreach products	ongoing
Provide outreach and education to support municipal stormwater management actions	Regional workshops on water quality and quantity issues	Q2, Q3
Empower and educate homeowners and businesses about water resources for reduced water bills and improved water quality and quantity.	Keeping Water Clean (KWC) school program; Greenscapes presentation: “Why Stormwater Matters,” “Greenscapes 101,”	ongoing
	“Slow the Flow” or other agreed upon topic	

<b>Activity 10</b>	<b>Support municipal and regional actions that promote resilient coastal habitats and communities through the use of nature-based solutions</b>	
<b>Description/Objective</b>	RC will continue to speak publically about necessity to protect habitat against storm/sea level rise impacts	
<b>CCMP Outcome</b>	Resilient coastal habitat, including nature-based coastal protection	
<b>Project partners</b>	LNS municipalities	
<b>Budget &amp; RC LOE</b>	\$40,000, 700h	
<b>SSCW Tasks</b>	<b>Deliverable</b>	<b>Timing (Q1 - 4)</b>
Assistance to communities in planning MVP projects, attending MVP workshops	At least one case study write up on lessons learned for MassBays newsletter list of presentations made	Q4
Promote resilient coastal habitats	Letter of support for at least one proposal for implementation	Q3-Q4

<b>Activity 11</b>	<b>Adopt a Beach and Talking Trash for Clean Oceans</b>	
<b>Description/Objective</b>	(Ongoing) Work with the public and schools to build marine debris awareness and institute behavior changes	
<b>CCMP Outcome</b>	Restored natural communities	
<b>Partners</b>	Volunteer Beachkeepers, Talking Trash Teens	
<b>Budget &amp; RC LOE</b>	\$4000, 200h	
<b>SSCW Tasks</b>	<b>Deliverable</b>	<b>Timing (Q1-4)</b>
Conduct <i>Adopt a Beach</i> trainings, support beachkeepers to conduct beach surveys and clean ups	List of training sessions and number of volunteers	Q1-Q4
Initiate community service projects that result in awareness and behavior changes	Number of Coastsweep and other clean up events held; litter reduction projects in cooperation with restaurants	Q3
Educate the public of the seriousness of plastic litter on land and in the oceans	List of publications and presentations	Q4

### Strategy 3.2 Guide local action for expanded habitat and improved water quality

<b>Activity 12</b>	<b>Promote Low-Impact Development</b>	
<b>Description/Objective</b>	(Ongoing) Promote and implement Low Impact Development (LID) and stormwater green infrastructure in MassBays communities.	
<b>Partners</b>	Greenscapes North Shore Coalition; LNS municipalities	
<b>Budget &amp; LOE</b>	\$20,000, 400h	
<b>SSCW Tasks</b>	<b>Deliverable</b>	<b>Timing (Q1-4)</b>
Provide technical assistance and grant support	List of LID education & outreach efforts	Q4
Provide grant proposal scoping and writing support	Documentation of support provided	ongoing
Provide support for efforts to install LID and stormwater management projects	Implementation of at least one LID demonstration site in the Lower North Shore, and others as opportunities arise.	Q4
Maintain the Commercial Street rain gardens in Salem	Photodocumentation during storm/flood conditions	ongoing

<b>Activity 13</b>	<b>Pepperweed Management and Control</b>	
<b>Description/Objective</b>	(Ongoing) Treat selected pepperweed sites in Salem Sound	
<b>Partners</b>	Volunteers	
<b>Budget &amp; level of effort</b>	\$2500, 100h	
<b>SSCW Tasks</b>	<b>Deliverable</b>	<b>Timing (Q1 - 4)</b>
Treat with pulling when found	List/map of prioritized sites	Q1
Organize volunteers to pull pepperweed	number of volunteers	Q4
Working with partners, treat prioritized areas	Map of known pepperweed sites with list of areas monitored with status (presence-absence and removal actions)	Q3

	<b>Reporting for EPA</b>	
<b>Description/Objective</b>	Reporting to MassBays Central Staff, engaging LGCs & regional stakeholders; promoting MassBays in local communities; attending staff and management committee/ subcommittee meetings; assisting the LGC with meetings and activities; and addressing requests for technical assistance or outreach.	
<b>RC level of effort (hrs):</b>	140	
<b>SSCW Activities</b>	<b>Deliverable</b>	<b>Timing (Q1 - 4)</b>
Maintain workflow according to scope of work	Reports and deliverables to MassBays central staff	monthly
Provide updates to MC	Quarterly reports to MassBays central staff, coinciding with MC meetings	Q1-4
Participate in MassBays MC and RC meetings	Attendance and participation in meetings	bimonthly
Participate on at least one MC Subcommittee		ongoing
Participate in NEPORT reporting	Spreadsheet with data for acres of habitat restored and funds leveraged	Q1
Seek input from LGC on progress and proposed workplan	Proposed FFY2020 workplan	Q4
Represent MassBays in regional associations and societies	List of associations and societies where MassBays is represented	Q4
Promote MassBays in local community settings	List of presentations and publications	Q4

## **Invoices, Reporting, and Deliverables**

**Invoices** on official letterhead detailing reimbursable expenditures for each line item included in the Budget should be submitted to MassBays Central Staff at least quarterly, and preferably monthly. Invoices should include accounting of match (estimated match associated with tasks below), with a running total (year-to-date) for both expenditures and match. SSCW should retain records documenting sources of both direct and project-specific match to be provided in the case of a Federal audit.

**Reporting to EPA** on “leveraged funds” and “habitat protected/restored” is required twice yearly. These data are used to justify continued Congressional investment in the National Estuary Program. MassBays Central Boston staff will solicit relevant data from SSCW as necessary; the scope of work includes responding to requests for this and other reporting information in a timely manner, and as completely as feasible.

**Deliverables** included in this scope should be provided as each Activity is completed, labeled for ready cross-reference to the Action number.

**Status reports** on each task included here should be provided quarterly, along with descriptions of changes in scope, timing, or deliverables.

**Acknowledgment** of MassBays funding (including the SSCW website) will cite “Massachusetts Bays National Estuary Program” or “MassBays,” and include relevant EPA grant number(s).